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Using Visitors' Motivations to Provide Learning Opportunities at Water-based Recreation Areas

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With the increase of nature-based tourism and recreation on public lands in the United States, recreation and tourism planners have an opportunity to provide environmental education to a wide diversity of people. However, recreationists visit natural areas to attain a variety of experiences and benefits, which might or might not include learning. Through an examination of visitors to fresh-water springs in north central Florida, this study identified (1) the recreation benefits visitors to fresh-water springs most desire, (2) the role learning plays in recreationists' motivations to visit water-based recreation areas, and (3) the recreation opportunities (i.e. facilities and services) that will best provide learning opportunities for all visitors. Respondents were divided into four groups according to where they were surveyed and whether or not they had a strong interest in learning. Three of the four groups indicated an interest in developed services and facilities (e.g. visitor centres and museums) to provide for learning opportunities. Results also showed that some visitors' desires for learning benefits were not related to developed facilities and were more closely associated with passive recreation activities and settings. Specific planning implications for the four types of nature-based tourists are described.

Introduction

It is difficult to underestimate the role of education in ecotourism. Some authors insist that education must occur if nature-based tourism business can be described as ecotourism (Fennell, 1999; Honey, 1999; Wallace & Pierce, 1996). Other authors might not specifically say education is an essential construct of ecotourism, but call for nature-based tourists to act responsibly, which implies some sort of education (Western, 1993). Although education might or might not be directly stated as a component of ecotourism, education has an important role in helping to provide a sustainable supply of quality nature-based recreation experiences as well as ecotourism opportunities (Fennell, 1999; Weiler & Ham, 2001). For example, learning is consistently rated as one of the most important

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motivations of nature-based visitors (Fennell, 1999; Roggenbuck *et al.*, 1990). Also, research shows education during recreational engagements can result in more environmentally responsible behaviour (Orams, 1996; Palmberg & Kuru, 2000).

Providing for sustainable nature-based tourism and quality recreation is becoming an important job for the US Forest Service, which manages over 191 million acres of public land in the United States and hosts more than 860 million visits annually (Betz *et al.*, 1999). Public nature-based recreation areas, like national forests, provide the vast majority of nature-based tourism and recreation opportunities in the US, but the role of environmental education at these sites is not well understood. For example, research has shown that many visitors to public nature-based recreation areas want to learn more about the environment; however, interpretation facilities and services continue to be lacking at these sites due to limited budgets and the lack of environmental education specialists working for public land management agencies (Roggenbuck *et al.*, 1990).

Since many nature-based tourism and recreation sites attract large numbers of tourists and local residents even without interpretive materials, nature-based tourism and recreation planners are left with a variety of questions. Do nature-based recreation visitors to sites without interpretive opportunities even want to learn? How can tourism planners, interpreters, and public land management professionals foster appreciation for nature while meeting the recreation needs of nature-based tourists? For two decades, ecotourism professionals have argued that addressing these questions can help clarify interpretation's role within nature-based tourism and recreation development and identify how interpretation can improve the experience of the visitor (Fennell, 1999; Sharpe, 1982; Weiler & Ham, 2001).

The overall research objective of this study is to identify the relationship between nature-based recreationists' motivations for learning and their preferences for recreation services and facilities. Researchers focused the study on visitors' motivations for knowledge-based learning, as opposed to learning new skills. Past research has shown the desire to learn new information is an important motivation of nature-based recreation visitors (Ham, 1992; Winter, *et al.*, 1998). Also, most public recreation agencies in the US are mandated to provide ecological, historical, and cultural education to the public. Specifically, this study attempted to identify (1) the recreation benefits that visitors to fresh-water springs in central Florida most desire, (2) the role knowledge-based learning plays in recreationists' motivations to visit water-based recreation areas, and (3) the recreation opportunities (i.e. facilities and services) that will best provide learning benefit opportunities for all visitors.

Integrating Learning into Nature-based Recreation Planning

To best infuse interpretive services and facilities into nature-based recreation planning, it is necessary to understand how and why recreationists experience the natural settings they are visiting. Research has shown that knowledge-based learning is just one of many experiences and benefits that people hope to attain from their recreational engagements (Driver, Tinsley & Manfredo, 1991). These

products of recreation are considered to be 'psychological outputs' (Lee & Driver, 1992), and social science researchers have collaboratively worked with natural resource managers to develop recreation management frameworks to help provide people with opportunities to attain the benefits they desire from recreation.

Current recreation resource management frameworks developed in the United States require managers to understand how specific activities conducted in specific settings result in experiences and benefits. They provide managers with a well-defined role in the production of recreation benefits, which are ultimately created or experienced by the visitors. For example, in order to provide opportunities for people to attain skill-building benefits, managers need to know what activities to allow in an area (e.g. backpacking, mountain biking, rock climbing) and how to design the setting in order to provide people with a challenge so they can improve their skills. Recreation resource management research has mostly examined people's desired settings, activities, and experiences as a whole and has not examined how settings and activities relate to a specific type of benefit (e.g. learning) (Driver, Brown & Peterson, 1991).

Past research on how recreation motivation relates to settings and activities has shown that a desire to learn drives many people to visit a wide range of nature-based recreation areas (Ham, 1992; Winter *et al.*, 1998). Although areas that have interpretive services and facilities seem to attract people with higher desires to attain knowledge-based learning benefits, learning can also be an important motivator for people who visit sites not based on education (Stein & Lee, 1995). Due to this interest in learning, environmental education and interpretation are becoming important parts of many public land management plans in the US (Roggenbuck *et al.*, 1990). However, to best implement interpretation into nature-based tourism and recreation planning, researchers need to evaluate visitors' desires to learn within the context of all their recreation motivations.

Using Recreation Motivation as a Planning Objective

Early recreation research focused on descriptive approaches that examined which activities recreationists participate in, such as fishing, swimming, hiking, etc. (Lee & Driver, 1992). Although this is useful for understanding activity preference, descriptive methods do not address why people participate, what other activities they might have done if other options were available, what satisfaction or rewards come from each activity, or how a quality experience can be enhanced (Driver & Tocher, 1970). A behavioural approach to recreation research can address these questions.

Behavioural approaches to recreation research are partially rooted in expectancy value theory (Lawler, 1973; Manfredo *et al.*, 1983). Expectancy value theory states that people engage in activities in specific settings to realise a group of psychological outcomes, which are known, expected, and valued (Atkinson & Birch, 1972; Fishbein & Ajzen, 1974; Lawler, 1973). In general, it means that expectations are beliefs that a given response will be followed by some known outcome (Tolman, 1960). Driver and Tocher (1970) describe this concept by saying recreation behaviour is goal-oriented and aimed at need satisfaction.

Since the 1970s, social scientists have examined these psychological benefits

that nature-based visitors attain (i.e. recreation experiences) and considered these benefits to be the goals of recreation participation. For example, research shows some people believe they improve their physical fitness, mental state, and family cohesion through recreation to natural areas (Driver *et al.*, 1991). According to the expectancy-value theory, people are motivated to travel in nature-based recreation areas in order to achieve these benefits; therefore, it is particularly important for recreation managers to understand what their visitors' motivations are – especially when they might want to target a specific recreation experience like knowledge-based learning.

Benefits-based management (BBM) provides natural resource managers with a framework to help provide for the hard-to-measure benefits associated with nature and connects management to these measurable outputs (Anderson *et al.*, 2000; Driver, 1996).

> Benefits-based management focuses on what is obtained from amenity resource opportunities in terms of consequences that maintain or improve the lives of individuals and groups of individuals, and then designs and provides opportunities to facilitate realisation of those benefits. (Lee & Driver, 1992: 11)

Central to studies in BBM is the use of recreation experience preference scales (REP scales). These scales, created by Driver and his associates, are based on recreation motivation research begun in the mid-1970s (Driver & Knopf, 1976; Driver *et al.*, 1991; Tinsley & Kass, 1978; Tinsley *et al.*, 1977). These studies, taken together, suggest that motivations for participation in even the most basic outdoor recreation activities are diverse and related to the attitudes, preferences, and expectations of the users (Manning, 1999). Driver and associates developed the REP scales to fill a need for a psychometric instrument that identifies and assesses the relative importance of benefits and experiences that serve as reasons why recreationists select certain activities and environments (Driver *et al.*, 1991). Due to the proven reliability and valid results obtained with these measures, the study described here uses the REP scales to assess learning's role as a recreation motivation.

Nature-based Recreation Learning

Learning has consistently been found to be a motivator for a variety of leisure activities. It fell in the most important quartile of all motivating factors for reading for pleasure and making crafts (Hawes, 1978; Pierce, 1980) and attending plays, lectures, and concerts (Tinsley & Kass, 1978). Roggenbuck *et al.*'s (1990) review of leisure learning found that the desire to learn new things while visiting US nature centres, socialising/partying, and driving for pleasure ranked in the top 25% of motivations listed.

Although learning is considered to be one of the major areas addressed in recreation motivation research, research rarely focuses on how to best provide learning opportunities in nature-based recreation areas. Roggenbuck *et al.* (1990) suggest that one of the reasons for the lack of learning benefits research is that most public land managers have science backgrounds and do not always place an emphasis on education. They also place blame for the lack of information on

leisure philosophers, educators, and practitioners who have focused more on how to provide interpretive materials rather than on what to provide and why that interpretation should even be provided.

Although providing for visitors' desired motivations is an important goal for understanding leisure benefits, research has also shown that a better educated visitor can benefit both the recreation site and overall environment (Ceballos-Lascuráin, 1996; Hammitt & Cole, 1998; Roggenbuck *et al*., 1990). According to Kimmel (1999: 41), 'Ecotourism avoids much of the counterproductive baggage that often accompanies standard education. People participate out of choice, there are no tests or grades, the sites are exciting and often exotic, and participants expect to learn in an enjoyable manner.' Since nature-based tourists are an easily accessible audience and likely to have some desire for education, creating more ecologically aware and responsible tourists is consistently listed as a requirement of ecotourism (Ceballos-Lascuráin, 1992; Ecotourism Australia, 2002; Honey, 1999; Weiler & Ham, 2001; Western, 1993) and a legitimate goal of interpretation (Ham, 1992; Tilden, 1957). Moreover, water-based recreation activities, which are examined in this study, often result in severe environmental impacts to sensitive environmental areas (i.e. wetlands); therefore, education is potentially an effective management technique to help change people's behaviour, resulting in less environmental impact (Krumpe & Brown, 1982; Widner & Roggenbuck, 2000). This requires nature-based recreation planners to identify how to integrate environmental education into visitors' recreation engagement even if learning might not be a primary motivation for that visitor.

Methods

Study site and population

The Ocala National Forest encompasses 383,220 acres in north central Florida and is located just north of Orlando, one of the United States' most popular tourism destinations (Figure 1). Hiking, camping, nature observation, bird watching, swimming, cycling, hunting, and fishing are all popular within the forest. Both developed as well as primitive camping areas are found throughout the area. Three small visitor centres are located on the north, south, and western edges of the Ocala. These facilities provide some environmental interpretive information, but they also provide information about recreation opportunities in the forest and sell books and novelties related to the environment.

Researchers recruited study participants from four areas within the Ocala National Forest: the Sweetwater Springs Cabin, Silver Glen Springs, Juniper Springs, and Salt Springs. Much of the recreation benefits research has focused on recreation conducted in areas that have limited or no development (Bruns *et al.*, 1994). This research examined visitors to heavily used water-based recreation areas, which are common throughout Florida. Because the temperature of the water flowing out of the springs is a constant 72F (22C), these areas tend to be popular recreation sites for both tourists and Florida residents in the hot summer months, and it is expected that this use will grow over the next decade (Florida Department of Environmental Protection, 2001).

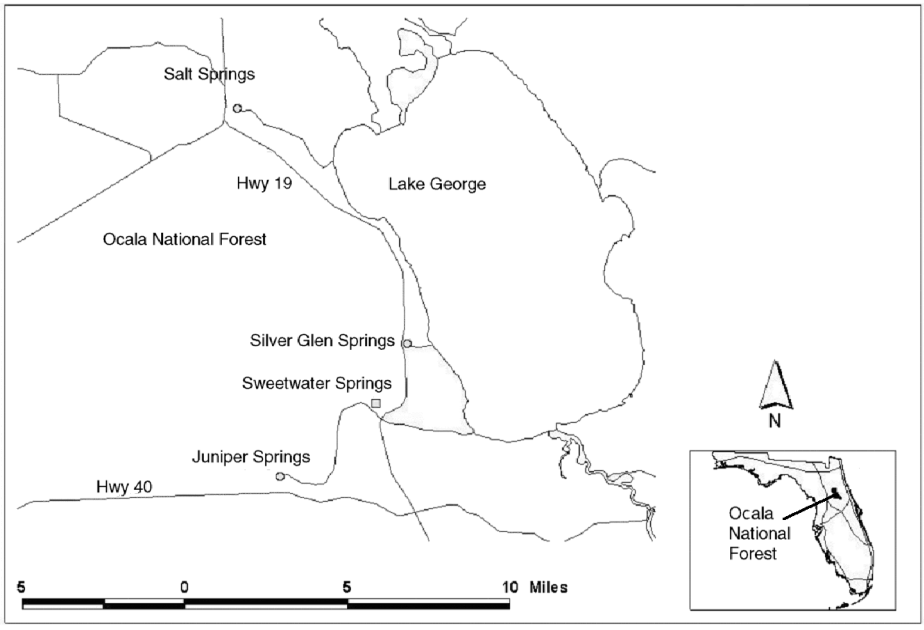

Figure 1 Ocala National Forest study sites

Data collection

In order to examine both overnight visitors to the area and day-use visitors, researchers used two methods of data collection. First, a list of 437 people who registered to spend a week in the Sweetwater Springs Cabin was used to survey cabin visitors. Respondents were initially contacted by mail with a covering letter explaining the study and requesting their permission to participate. The questionnaire was sent a week later and included another cover-letter explaining the study along with a postage-paid return envelope. Follow-up procedures suggested by Salant and Dillman (1994) were used to optimise the survey response rate. Of the 437 questionnaires sent out, 302 were returned, a response rate of 69%.

Second, trained interviewers systematically selected on-site visitors at each of the three springs to interview. The selected visitors were briefed as to the intent of the study and those agreeing to participate were asked several general questions. They were then given a survey packet, which included the questionnaire, a covering letter, and postage-paid envelope. Out of 360 visitors surveyed, 136 responded to the survey, a response rate of 40%. Tests of non-respondents for both samples showed that there was no difference between respondents and non-respondents for residence, past experience at the site interviewed, activity participation, and their preference for five recreation motivation statements.

One questionnaire was developed for both *on-site* and *cabin* visitors, and a total of 426 usable questionnaires (from on-site and cabin visitors) were examined. The questionnaire consisted of 20 questions regarding participants' recreation participation in natural areas. Study participants were asked to use magnitude scaling to rate their value for recreation activities, facilities, and services.

Magnitude scaling allows respondents to create their own scales based on one numeric value assigned by the researcher to a value item. Allowing respondents to use their own measures of importance relative to a specific number increases the likelihood that accurate measurements will be attained (Lodge, 1981).

Participants were then asked to think about the services and facilities they ranked the highest and indicate why (i.e. motivations or desired experiences and benefits) they would visit a site that featured these items. The motivations were listed in the form of the 54 experiences and benefits that compose the recreation experience preference (REP) scale (Driver *et al.*, 1991). Participants indicated the importance each of the motivations would be for visiting the site via a five-point Likert scale where 1 corresponded to 'not at all important' and 5 corresponded to 'extremely important'.

Data analysis

Data analysis was designed to meet the three research objectives outlined above and included both univariate and multivariate statistical procedures. The analysis was divided into three phases. For the first phase, principal components factor analysis with varimax rotation was performed on the 54 experiences and benefits to produce 11 benefit domains (Table 1). A grand mean for each domain was calculated for all participants, and the remaining data analysis was based on these 11 domain means rather than the original 54 benefit items.

In the second phase of the analysis, respondents were divided into four groups by categorising cabin and on-site respondents into *learners* and *non-learners*. The arithmetic mean for the Learning domain, created in phase one, was calculated for each respondent. Visitors who had learning domain means of 4.0 and greater (indicating they believe the Learning domain is at least 'very important') were categorised as *learners*. Visitors with Learning domain means below 4.0 were categorised as *non-learners.* All participants were placed into one of four groups: (1) 174 participants (40.9 %) were *cabin non-learners*, (2) 115 participants (27.1%) were *cabin learners*, (3) 87 participants (20.5%) were *on-site non-learners*, and (4) 49 participants (11.5%) were *on-site learners*.

For the final phase, each of the four groups of visitors was characterised according to their desired benefits and most preferred activities, facilities, and services. The importance each group put on the 11 benefit domains was compared using analysis of variance ($p = 0.05$) and Tukey's *post hoc* multiple comparison test.

Since magnitude scaling data were used to evaluate visitors' preferences for services and facilities, researchers calculated geometric means to compare means among the four groups. The data generated through magnitude scaling represent ratios between items rather than specific measurements; therefore, the arithmetic mean cannot be used to represent the average. The geometric mean is the standard measure of central tendency with magnitude data (Lodge, 1981). It is calculated by multiplying the n values together and taking the nth root of the product. Researchers calculated a geometric mean for each category of recreation activity (water and land) and facility and service (education, lodging, food, and amenities). Analysis of variance was also performed on the geometric mean scores to compare the groups' preferences for facilities and services.

Table 1 Benefit domains and individual benefit scale items

	Mean*	***Sample size***
Group/Family	4.1	410
Bring your family closer together	4.3	401
Enjoy the natural scenery	4.7	407
Be with members of your own group	4.0	401
Be with others who enjoy the same things as you do	3.4	402
Escape	4.0	403
Experience solitude	3.9	400
Get away from crowds of people	4.0	398
Relaxation	4.0	407
Rest mentally	4.0	401
Enjoy the smells and sounds of nature	4.3	401
Help release built-up tension	3.8	396
Get away from the usual demands of life	4.3	401
Rest physically	3.7	402
Learning	3.7	406
Learn more about the natural history of the area	3.7	399
Keep physically fit	3.7	405
Learn more about nature	3.9	401
Experience new and different things	3.7	397
Learn more about the cultural history of the area	3.4	393
Improve Well-being and Sense of Self	3.5	407
Feel more self-confident	3.1	401
Experience a sense of personal freedom	3.7	398
Help you recover from everyday stress	4.0	399
Reduce depression or anxiety	3.6	395
Gain a greater sense of independence or autonomy	3.1	391
Feel more self-reliant	3.1	401
Gain a more holistic sense of well-being	3.3	397
Help clarify your thinking	3.5	396
Feel at one with living things	3.0	361
Enjoy a place that is special to you	4.1	396
Put you in a happier frame of mind	4.0	398
Develop or enhance your environmental ethic	3.2	396

Table 1 (*cont*.) Benefit domains and individual benefit scale items

Improve your outlook on life	3.5	397
Enjoy a sense of timelessness	3.5	396
Adventure/Excitement	3.3	405
Experience excitement	3.3	399
Enjoy a different temperature than what you experience back home	2.7	399
Do something challenging	3.1	397
Experience adventure	3.5	401
Feel exhilarated	3.6	394
Self-improvement	3.1	408
Develop your skills and abilities	2.7	397
Maintain a sense of self-pride	3.1	397
Express and nurture personal spiritual values and orientations	3.2	398
Reflect on and clarify personal values	3.2	397
Maintain a desired image of yourself	2.7	397
Do Your Own Thing	3.0	401
Do things your own way	3.4	399
Be in control of things that happen	3.4	393
Chance dangerous situations	2.1	393
Creative	2.7	402
Do something creative such as sketch, paint, or take photographs	2.7	402
Social Skills and Development	2.5	402
Share what you have learned with others	2.5	399
Lead other people	2.0	396
Be with caring and sensitive people	3.1	396
Avoid the unexpected	2.3	392
Help maintain pride in your race or cultural subgroup	2.3	397
Help others develop their skills	2.5	398
New Experience	2.1	404
Talk to new and varied people	2.4	402
Observe other people in the area	2.0	399
Have others know that you have been there	1.7	395
Escape the family temporarily	2.1	395

* 1 = Not at all important, 2 = Somewhat important, 3 = Important, 4 = Very important, 5 = Extremely important

Results and Discussion

Sociodemographics and recreation experience

The majority of participants were female, between the ages of 36 and 55, and Caucasian (Table 2). Slightly more cabin visitors went to college and had higher income levels than on-site visitors, but these differences were not significant ($p >= 0.05$). Only a small minority of participants were single or married with no children, and most participants indicated that they travelled with their family the last time they visited a natural area for recreation. About one-third of both cabin visitors and on-site visitors had visited natural areas between one and three times over the past year (Table 3). Most visitors to the Sweetwater Cabin (77.7%) and most on-site visitors (89.8%) travelled with their families on their last trip to a nature-based recreation site (Table 4). Only a few (3.9% of cabin and 1.5% of on-site respondents) travelled by themselves, and only 12.5% of cabin and 7.3% of on-site visitors travelled with unrelated friends on their last visit to a nature-based recreation area.

First objective: Important benefits

Factor analysis was used to group the 54 benefits from the recreation experience preference scale into 11 named domains (see Table 1). Items related to family and group interaction along with nature appreciation factored into a category labelled Group/Family and received the highest overall mean (4.1) from all participants. Apparently, study respondents consider being with friends and family to be an intricately related experience with appreciating nature, since factor analysis included *enjoy the natural scenery* in a group with the more social items. This highlights the mix of motivations this study's participants have for water-based recreation, a contrast to past research using the REP scales, which often shows nature appreciation items factoring into a separate category (Driver *et al.*, 1991; Manfredo *et al.*, 1983; McCool & Reilly, 1993; Virden & Knopf, 1989).

Results also show that visitors go to water-based recreation areas to relax, as indicated by the next most preferred domains, Escape and Relaxation, which both received overall mean scores of 4.0. As with the Group/Family domain, the Relaxation domain contained a nature-oriented benefit as one of its highest-rated elements (i.e. *enjoy the smells and sounds of nature*).

The Learning domain ranked fourth overall with a mean of 3.7, indicating learning was close to being 'very important' for most visitors. Learning generally ranks in the top half of important benefits in recreation studies, so it is not unusual that it was ranked fourth in this study. What is different about the Learning domain in this study is that *keep physically fit* clustered with the group.

The largest domain, Improve Well-being and Sense of Self, was ranked fifth. This domain contains benefits that relate to stress relief and feelings about one's physical and mental state.

The desire to stay within one's own group is evidenced by the lowest-ranked domain, New Experience, which has an overall importance mean of 2.1. This domain includes *talk to new and varied people*, *observe other people in the area, have others know you have been there*, and *escape the family temporarily.* This finding is quite typical of recreation experience research (Driver *et al.*, 1991). Visitors to

Table 2 Respondent sociodemographic characteristics

	Cabin visitors (n = *290*)	*On-site visitors* (n = *136*)
Gender		
Female	60.2	48.5
Male	36.7	47.1
Race/ethnicity		
African-American	1.4	0
Caucasian	91.3	86.8
Hispanic	0	5.3
Other	3.2	6.3
Marital status/children		
Single, no children	14.3	13.7
Married, no children	16.1	12.2
Married with children >18	21.1	18.3
Married with children <18	29.7	39.7
Single parent with children >18	5.4	4.6
Single parent with children <18	2.2	3.8
Other	16.1	7.8
Age		
18–25 years	3.6	5.3
26–35 years	8.2	14.4
36–45 years	35.1	37.1
46–55 years	31.5	24.2
56–65 years	11.8	11.4
66–75 years	6.5	2.3
Over 75	2.5	1.5
Education		
Eighth grade or less	0.4	1.5
Some high school	3.2	4.6
High school graduate or GED	11.4	26.7
Some college	36.4	23.7
College graduate	31.1	19.8
Some graduate school	5.7	6.9
Graduate degree	11.8	16.8

Table 3 Visits to natural areas in the past 12 months

Number of visits	*Percent*	
	Cabin visitors (n = *290)*	*On-site visitors* (n = *136)*
0	5.6	0.0
1–3	31.4	35.3
4–6	22.0	24.3
7–10	12.2	11.0
11–15	6.6	9.6
Over 15	21.8	19.9

Table 4 Travel groups of the respondents when they last visited a nature-based recreation area

Travel group	*Percent*	
	Cabin visitors (n = *290)*	*On-site visitors* (n = *136)*
Unrelated friends	12.5	7.3
Group or club	3.8	1.5
Family and friends	28.8	19.7
Two or more families	7.6	17.5
Family	41.3	52.6
No one	3.9	1.5

natural areas are often not motivated to interact with people whom they did not travel to the area with.

Second objective: The role of learning

Since some visitors placed greater importance on learning than other visitors, the four visitor types (i.e. cabin learners, cabin non-learners, on-site learners, and on-site non-learners) will be described in terms of the benefits they listed as their most important motivations for recreation. By comparing people who find learning benefits 'very' to 'extremely important' with people who do not place as much importance on learning allows research to identify how learning benefits are related to other recreation benefits.

Since the two learner categories (cabin learners and on-site learners) tended to give a higher rating to all benefits on the REP scale, the priority each group placed on the domain**s**, rather than just the domain means, is discussed here. The cabin learners rated Learning as their most important domain (Table 5). They gave it a mean of 4.4, indicating that learning was between very important and extremely important as a motivation to visit a water-based recreation area. Following

Table 5 Benefit domains and means for all groups

Benefit domains		*Respondent Groups*				*ANOVA F-test*	*Tukey post hoc*
	*Overall mean**	*Mean for cabin learners (n = 115)*	*Mean for on-site learners (n = 49)*	*Mean for cabin non-learners (n = 174)*	*Mean for on-site non-learners (n = 87)*		
Group/Family	4.1	4.3	4.4	3.9	3.9	12.9	1,2 > 3,4
Relaxation	4.0	4.3	4.5	3.7	3.9	20.1	1,2 > 3,4
Escape	4.0	4.3	4.2	3.8	3.5	12.1	1,2 > 3,4
Learning	3.7	4.4	4.5	3.1	3.2	238.4	1,2 > 3,4
Improve well-being and sense of self	3.5	4.0	4.0	3.1	3.2	37.4	1,2 > 3,4
Adventure/ excitement	3.3	3.7	3.8	2.8	3.2	40.0	1,2>4>3
Self-improvement	3.0	3.5	3.6	2.7	2.7	26.3	1,2 > 3,4
Do your own thing	3.0	3.0	3.4	2.8	3.0	5.8	2>3; 1,2,4; 1,3,4
Creative	2.7	3.2	3.1	2.5	2.2	15.6	1,2 > 3,4
Social skills and development	2.5	2.8	3.1	2.0	2.4	30.0	1,2 > 3,4
New experience	2.1	2.2	2.6	1.8	2.0	16.2	2 > 1,3,4

1 = Not at all important, 2 = Somewhat important, 3 = Important, 4 = Very important, 5 = Extremely important

Learning in a three-way tie is Group/Family (4.3), Relaxation (4.3), and Escape (4.3).

On-site learners also rated Learning (4.5) as their most desired domain – along with Relaxation, which also received a score of 4.5. Following Relaxation is Group/Family with a mean of 4.4. The on-site learners ranked Adventure/ Excitement, Self-improvement, and Do Your Own Thing higher than any other group and higher than the overall means for each domain.

Cabin non-learners believe the Group/Family domain is the most important (3.9), but Escape (3.8) and Relaxation (3.7) received similar scores. Cabin non-learners rated Learning the lowest of the four groups of people with a mean of 3.1. This trend of rating benefits low is apparent for other domains besides learning. Out of the four groups, cabin non-learners gave the lowest means to Adventure/Excitement (2.8), Do Your Own Thing (2.8), Social Skills and Development (2.0), and New Experience (1.8) domains. However, the order in which they rated the importance of each domain was similar to the other groups.

On-site non-learners felt Group/Family (3.9) and Relaxation (3.9) were the most important benefits. The Escape domain was the third most important benefit (3.5), and it was followed in a three-way tie for fourth between Improve

Well-being and Sense of Self, and Adventure/Excitement – all domains which received an importance mean of 3.2. In general, on-site non-learners rated the motivations similar to the overall domain means. However, they felt the Do Your Own Thing domain was more important than the Self-improvement domain, rating them 3.0 and 2.7, respectively.

In summary, even though the groups classified as non-learners did not rate the Learning domain higher than 4.0, results show that the Learning domain does rank in their top tier of benefits (i.e. fourth highest for both groups). Results also show both non-learner groups tended to rate benefits lower than the learner groups. In fact, non-learner groups rated nine of the eleven domains significantly lower than the two learner groups. Therefore, it is important to focus on the benefits they rated the highest, and these indicate the non-learner groups travel to the springs to be in a natural setting with friends and families and to relax. Learning is important to these visitors, but it cannot be considered a primary motivation for their visit to a water-based recreation area.

Third objective: Appropriate learning recreation opportunities

The four visitor groups were compared based on their desires for a number of services and facilities that were found or could potentially be found in a water-based recreation area. Magnitude scaling allowed relative values to be identified between the four groups' preferences for: education, water activities, land activities, overnight facilities, food and supplies, and amenities.

Examining the data for educational service and facility preferences (Table 6) provided three findings. First, children's activities listed in the survey were not preferred by any of the four groups. *Day camp for kids* and *children's programmes*

Table 6 Geometric means for educational services and facilities, by group

	Cabin learners (n = *115*)	*On-site learners* (n = *49*)	*Cabin non-learners* (n = *174*)	*On-site non-learners* (n = *87*)
Interpretive signs	50.0	50.0	50.0	50.0
Visitor centre*	55.6	46.7	45.6	51.3
Museum	58.5	41.5	46.5	48.9
Wildlife classes*	44.4	38.6	38.5	37.7
Outdoor kiosks*	46.2	28.0	35.9	36.7
Nature hikes	44.4	31.8	35.6	36.7
Exhibits*	43.7	30.8	32.1	34.4
Children's programmes	37.6	33.4	33.0	37.5
Cultural Events	37.2	24.7	31.1	32.2
Evening interpretation programmes	33.7	24.3	26.4	28.6
Day camp	29.4	25.1	26.3	30.0

*Statistically significant between groups ($p < 0.05$)

both received low scores from most respondents. Even though many of the recreationists visit water-based recreation areas with their families (see Table 5), they were not interested in children's learning facilities and services.

Second, respondents tended to rate the most developed learning facilities (*visitor centre* and *museum*) fairly highly. Visitors did not indicate they wanted to interact with educators during guided nature hikes, evening interpretation programmes, or wildlife classes. Instead, they wanted facilities to provide that information.

Finally, results show that categorising people as 'learners' based on their preferences for learning benefits does not necessarily imply they will rate educational facilities and services highly. In fact, on-site learners ranked many educational services and facilities lower than other groups. For example, they ranked *day camp for kids* (25.1), *evening interpretation programmes* (24.3), *cultural events* (24.7), *interactive exhibits* (30.8), *guided nature hikes* (31.8), *outdoor kiosks* (28.0), and *museums* (41.5) lower than any other group.

Previous research has shown that learning can occur in more situations than just gaining facts from interpretive facilities and services (Roggenbuck *et al.*, 1990). On-site learners said learning benefits are 'very important' to 'extremely important' motivations to visit a site that has passive recreation opportunities. Therefore, it can be assumed that they believe that activities like swimming, hiking, and snorkeling help them achieve their learning motivations. Passive recreation activities offer opportunities for visitors to actively explore nature. Although they might not be experiencing formal environmental education (e.g. interpretive signs, nature presentations, educational displays), these recreationists' might believe they achieve their learning motivations through direct exposure to nature.

In terms of other recreation facilities and services, most visitors showed they did not prefer much development (Table 7–11). On-site learners usually had the lowest scores for developed options; however, they did show a comparable interest in renting recreation equipment compared to the other groups. In fact, they rated snorkel rentals higher than all other groups.

Table 7 Geometric means for overnight facilities, by group

	Sweetwater learners (n = 115)	*On-site learners (n = 49)*	*Sweetwater non-learners (n = 174)*	*On-site non-learners (n = 87)*
Cabins	75.9	37.4	66.4	52.0
Tent camping	61.3	59.6	52.5	60.5
Lodge/hotel	50.0	50.0	50.0	50.0
Cabana	51.7	28.5	53.3	38.8
Treehouse	45.4	23.9	41.7	34.5
Boat mooring	30.9	28.7	30.6	28.7
Road vehicle camping	20.8	27.1	22.8	32.4

Table 8 Geometric means for water activities, by groups

	Cabin learners (n = 115)	*On-site learners (n = 49)*	*Cabin non-learners (n = 174)*	*On-site non-learners (n = 87)*
Swimming	81.3	84.5	77.3	85.3
Canoeing	75.5	57.7	61.5	59.3
Snorkelling	62.4	65.8	49.4	63.0
Boat Fishing	50.0	50.0	50.0	50.0
Boating	37.7	33.0	46.5	42.9
Shore fishing	31.1	26.7	38.3	41.9
Kayaking	34.6	28.7	34.5	30.4
Boat tours	20.4	20.1	21.5	26.4

Table 9 Geometric means for land activities, all groups

	Cabin learners (n = 115)	*On-site learners (n = 49)*	*Cabin non-learners (n = 174)*	*On-site non-learners (n = 87)*
Picnicking	72.6	75.9	68.0	69.3
Hiking	73.5	71.2	61.3	63.4
Sunbathing	50.0	50.0	50.0	50.0
Walking	45.5	53.9	41.4	48.6
Biking	39.3	31.2	44.9	39.6
Horse riding	17.5	19.0	20.0	22.0
Concerts	31.5	19.6	28.6	32.4
Playground	24.1	32.5	25.6	32.8
Volleyball	17.0	25.7	20.5	27.8

Table 10 Geometric means for food and supplies, by group

	Cabin learners (n = 115)	*On-site learners (n = 49)*	*Cabin non-learners (n = 174)*	*On-site non-learners (n = 87)*
Food store	50.0	50.0	50.0	50.0
Convenience store	42.7	39.6	47.4	56.2
Takeaway café	26.8	23.9	31.7	33.7
Restaurant	27.9	22.0	28.4	31.2
Vending machines*	19.1	27.4	23.6	39.6

*Item was statistically significant ($p < 0.05$)

Table 11 Geometric means for amenities, by group

	Cabin learners (n = 115)	*On-site learners (n = 49)*	*Cabin non-learners (n = 174)*	*On-site non-learners (n = 87)*
Canoe rentals	50.0	50.0	50.0	50.0
Boat rentals	32.2	37.9	32.4	44.3
Bike rentals	31.2	28.7	37.5	40.9
Snorkel rentals*	29.2	39.7	29.3	34.2
Glass-bottom boat tours	23.2	23.1	23.3	26.2
Horse rentals	18.7	22.0	23.8	25.6
Horse riding	10.5	13.0	11.4	13.2
Games room	4.8	7.1	6.9	10.6

*Item was statistically significant ($p < 0.05$)

Major Findings

These results show that although visitor centres and museums might help some visitors achieve learning benefits, giving visitors a chance to explore and interact with the natural environment without facilities and services might also serve as a learning opportunity. Although existing recreation management frameworks are based on the assumption that people with different motivations prefer different and predictable activities and settings, this study shows this is not necessarily the case – especially when learning is singled out (Driver *et al.*, 1987). In other words, simply knowing that people place high importance on learning does not imply they prefer a recreation setting with plentiful education facilities and services. In fact, for visitors to springs in the Ocala National Forest, learning is more than just gathering new information. It also includes a physical fitness component, as indicated by the factor analysis.

In the case of learning, nature-based tourism and recreation planners need to understand that people take different approaches to or have different perceptions of learning, as evidenced in their associated motivations for visiting a recreation site. Cabin visitors, who rated benefits associated with being with family and friends, relaxing, and escaping as high, were more likely to choose developed learning facilities (e.g. museums and visitor centres). In contrast, on-site visitors who place high importance on learning and relaxation, being with friends and family, experiencing adventure/excitement, self-improvement, and doing things their own way, do not prefer development. They prefer opportunities to actively experience nature and learn without the help of facilities or services.

These results suggest the value of taking a more holistic approach to designing opportunities for visitors. Nature-based tourism and recreation planners can take advantage of the commonalities in desires for facilities, services, activities and related benefits among the four groups while providing for the diversity among visitor desires. The following section discusses the results in terms of their implications for planning.

Planning Implications

As stated earlier, providing visitors with quality learning opportunities has multiple implications for sustainable tourism. First, learning is consistently rated an important motivation of nature-based tourists, and improved learning opportunities will help to provide visitors with opportunities to achieve this motivation (Roggenbuck *et al.*, 1990). Second, helping nature-based visitors learn more about the environment can lead to more sustainable behaviours and aid in achieving ecotourism's goals of sustainability (Palmberg & Kuru, 2000). This research shows nature-based visitors have different motivations for visiting a recreation area, and they desire different recreation settings to satisfy those motivations. According to Middleton and Hawkins (1998), tourism and recreation organisations must better identify and target specific groups or segments of prospective visitors to ensure their natural areas are managed sustainably. This study provides planners with recommendations to manage the social and physical setting of a water-based recreation site to provide opportunities for different types of people to attain the desired learning benefit, which would also aid in achieving the managerial goals of sustainability.

Interpretation and education that incorporate the direct experience of visitors as a teaching tool are shown to have an improved impact on learning and attitudes (Millar & Millar, 1996). This study's results show visitors desire both direct experience with nature and opportunities to learn. They just want to learn in different ways. If messages that address issues of sustainability (e.g. responsible behaviours and environmental stewardship) are incorporated into visitors' recreational experiences, visitors are more likely to learn the information and, therefore, adopt more environmentally responsible behaviours (Millar & Millar, 1996; Orams, 1996). The following planning implications address the two major types of water-based recreation visitors examined in this study (i.e. learners and non-learners). For each type, the recreation setting will be described – focusing on how to best provide that type of visitor with the opportunity to learn about the environment.

Planning for learners

Cabin learners desire services and facilities that allow them to explore and experience nature. They are also looking to be with their family and friends and they want to relax. In terms of recreation activities, they prefer less developed recreation opportunities, such as canoeing, swimming, and picnicking. Planners must maintain opportunities for their visitors to interact with the group they came to the area with, while allowing them to easily experience the water resource. To attain learning benefits, they desire the most developed options: visitor centres and museums. Although it is unlikely these facilities can be built adjacent to the water-based attraction, planners could strategically locate visitor centres and museums on highly used travel routes to the water resource. Also, information can be supplied at the main attraction area, which directs visitors to those areas where they can better learn about the environment.

To provide for on-site learners' motivations, managers must create a different recreation setting than that described for cabin learners, even though their motivations are fairly similar. These visitors have a generally low preference for

development in their preferred recreation setting. Their form of preferred learning opportunities might not include any interpretive materials. Learning, to them, might simply require some form of access to nature. For example, On-site Learners prefer to hike and to camp in tents, which do not require many facilities, but they do afford the benefits found in the domains Adventure/Excitement, Self-improvement, and Do Your Own Thing, which were rated 'important' for on-site learners. Although limited, environmental education research has shown that nature-based recreation areas provide good opportunities for environmental education even when they lack interpretive materials. For example, in a qualitative investigation of the education opportunities of hiking trails, Ferreira (1998) found hikers believe certain aspects of trail development (e.g. distance, maintenance, and aesthetics) are important to help them notice features that are of environmental importance.

Planning for non-learners

Although this study classified people who rated the learning benefit domain lower than 'very important' (i.e. 4.0) as non-learners, these visitors still showed some motivation to learn on their visits. Providing quality learning opportunities to this group is a potentially valuable tool for sustainable tourism professionals because they are likely to be the type of visitor who most needs to be educated about environmentally responsible behaviours and sustainable tourism issues.

Cabin Non-learners do not desire many facilities and services in their recreation areas, but they want opportunities to swim, picnic, hike, cycle, and stay in cabins. Cabin non-learners visit water-based recreation areas to be with their family and friends and to relax. Since learning is not as strong a motivation, planners would have to infuse interpretation within existing recreation opportunities, which could help provide for their most important desired benefits and simultaneously provide for learning benefits. For example, interpretive signs and prompts in picnic areas, along trails, and throughout the area surrounding the cabins, and in the cabins, would probably satisfy a diversity of motivations – including learning. In fact, learning opportunities that allowed visitors to gain direct experience by interacting with the learning facilities will more likely improve their ability to learn about nature (Millar & Millar, 1996; Orams, 1996). This would allow tourism planners to provide environmentally responsible behavioural messages to a group not actively seeking that message, and perhaps to a group who might most need to hear that message.

Finally, on-site non-learners highly prefer visitor centres. In fact, they valued visitor centres more than on-site learners. On-site non-learners were also more supportive of museums than on-site learners and cabin non-learners. Therefore, on-site non-learners might be more likely to visit an educational centre such as a visitor centre or museum more than the other two groups. However, Learning was only their fourth most important motivation, so to provide opportunities for these visitors to attain more knowledge, managers should create interactive, activity-oriented interpretive facilities throughout the recreation area. They show a strong desire to be in the water, so this group would most likely use interpretive materials found within or in close proximity to the water.

Future Research

Interpretation at outdoor recreation sites provides an important opportunity to provide information to the millions of Americans visiting these areas. However, research is just beginning to understand how people's desires to learn fit in with their reasons for taking part in outdoor recreation. In order to improve the effectiveness and integration of interpretation within outdoor recreation sites, research should move in several directions:

(1) Re-evaluate the concept of learning within recreational engagements. This study showed that many people who rate learning as an important motivation do not require developed facilities and services to give them this information. Future research should examine if people who visit primitive and semi-primitive areas learn new information and how they attain this new information. Are they gaining new skills? Does the active experience of watching ecological processes enlighten them about the science of ecology? Or, do they feel as if they have achieved their desire to learn by simply acquiring new and unique experiences?
(2) Examine visitor motivations to other developed nature-based recreation sites. As stated above, outdoor recreation motivation research has focused on recreation in primitive or semi-primitive recreation sites. Research of other highly use and developed nature-based recreation sites must be examined.
(3) Identify motivations of non-users. Visitor surveys are only able to infer to the populations who visit sites. Recreation motivation research rarely examines people who do not visit recreation sites. For example, people will not visit an area if they believe they do not have an opportunity to achieve their desired benefits at that area. Understanding why people do not visit an area can be even more important than understanding why people do visit an area. This type of research not only has implications for the general nature-based tourist, but also extends to populations who do not commonly visit nature-based recreation areas like minority groups and people with low income levels. Research that identifies what non-traditional outdoor recreationists might want from an outdoor recreation site will help public land management agencies plan recreation areas to serve a greater diversity of people.

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